On page 20, line 21, following "control and data over Ethernet", please delete "32" and insert therefor - - 41 - -.

In the Drawings

Please amend Figures 9, 16c, 17, 18, 19, 20, 23, 26, and 35 as shown in red in the attached drawings.

REMARKS

Applicant respectfully requests that the Examiner enter the amendments set forth above prior to examining the above-referenced application.

Applicant amends the specification and Figures 9, 16c, 17, 18, 19, 20, 23, 26, and 35 to correct typographical errors. Specifically, reference numeral 32 is a duplicate. Therefore applicant replaces reference numeral 32 with reference numeral 41 in both the specification and Figures 9, 16c, 17, 18, 19, 20, 23, and 26. Applicant adds reference numeral 41 to the connection between NMS 60 and the network device 540 in Figure 35. Reference numeral 41 is referred to in the specification and is used in other figures to designate the same part of the invention. No new matter is added by these amendments.

For the Examiner's convenience, Applicant encloses a copy of page 20 of the specification in which the above corrections are indicated in red.

The Examiner is urged to telephone the undersigned Attorney for Applicant in the event that such communication is deemed to expedite prosecution of this matter.

Respectfully submitted,

Date: __November 13, 2000__

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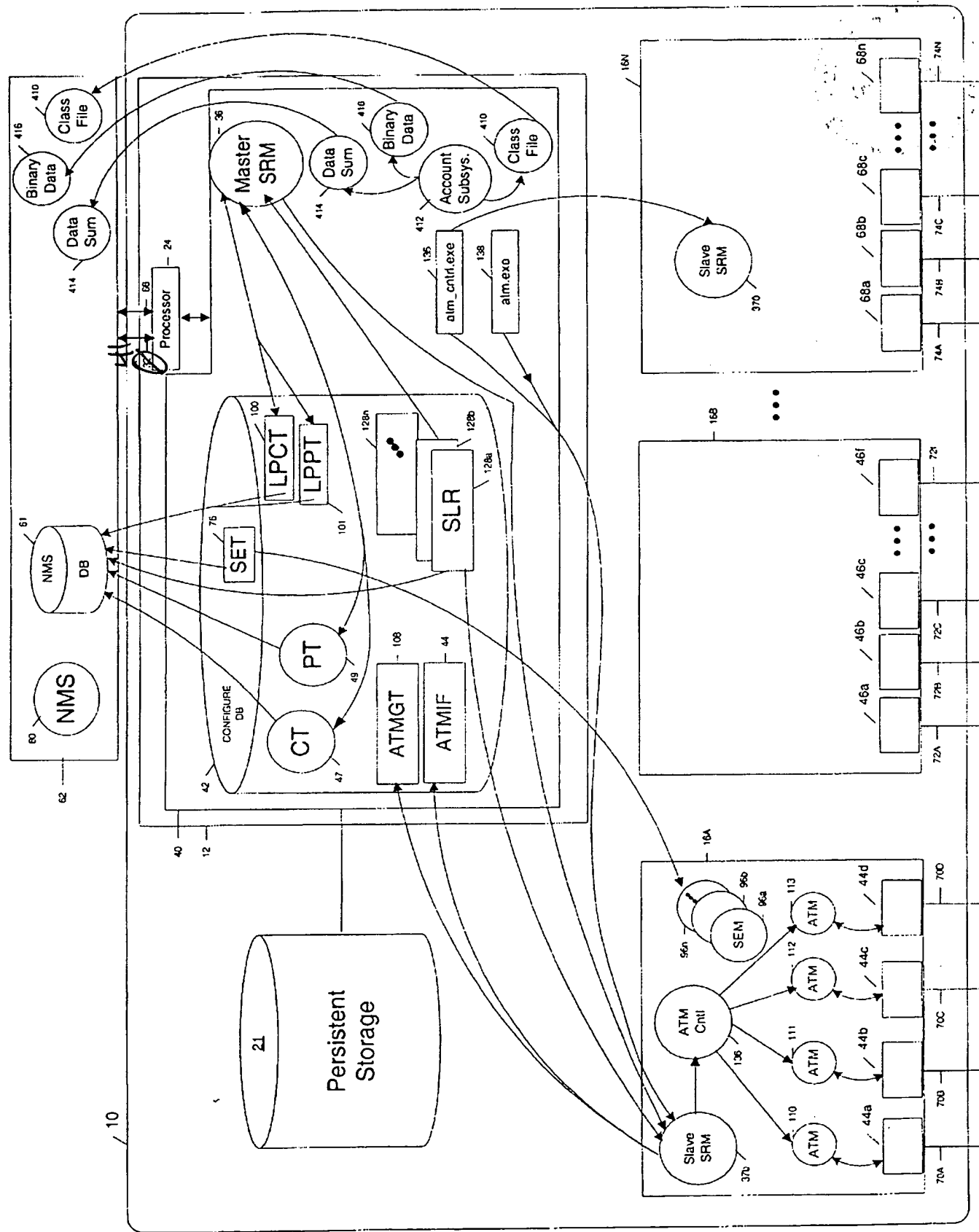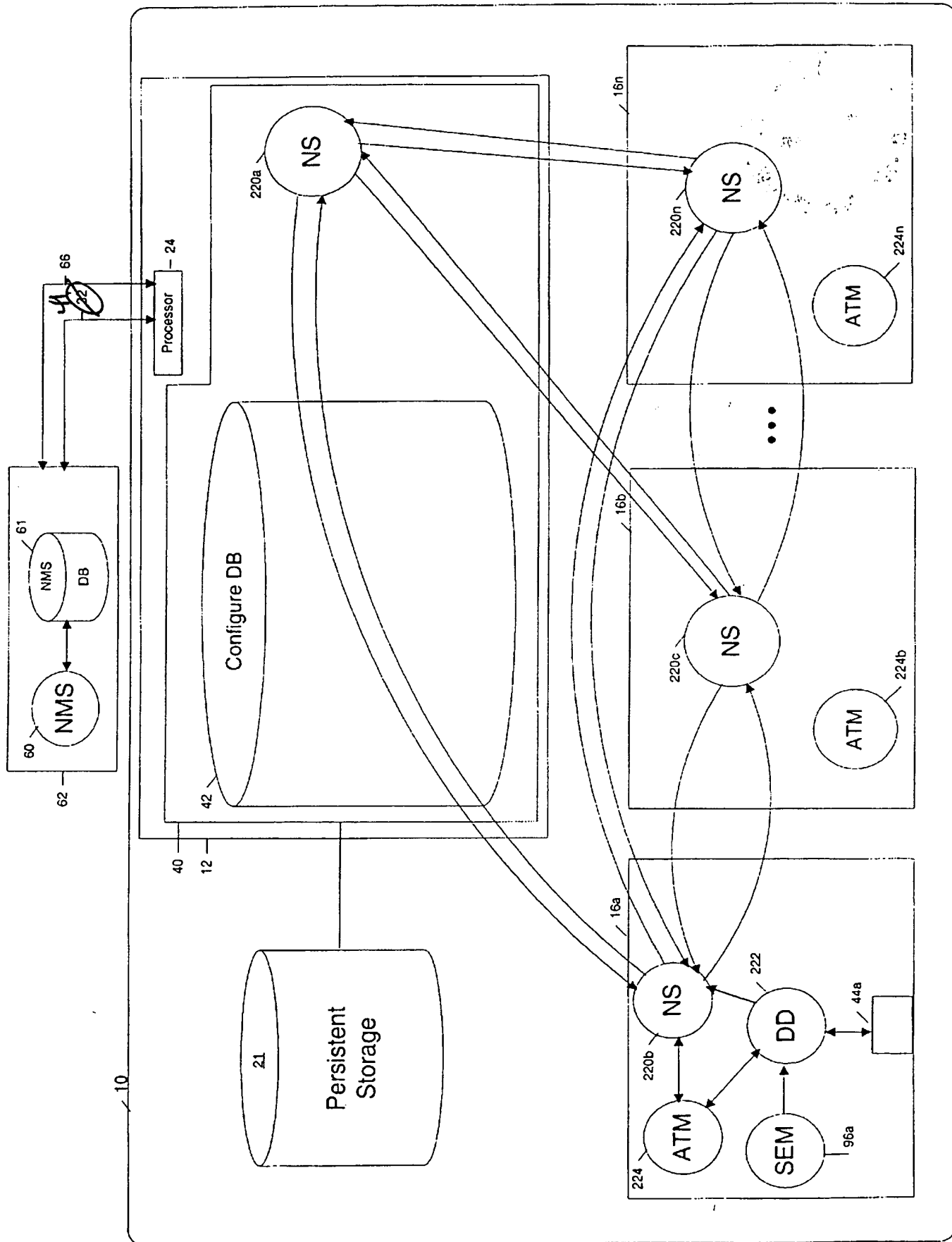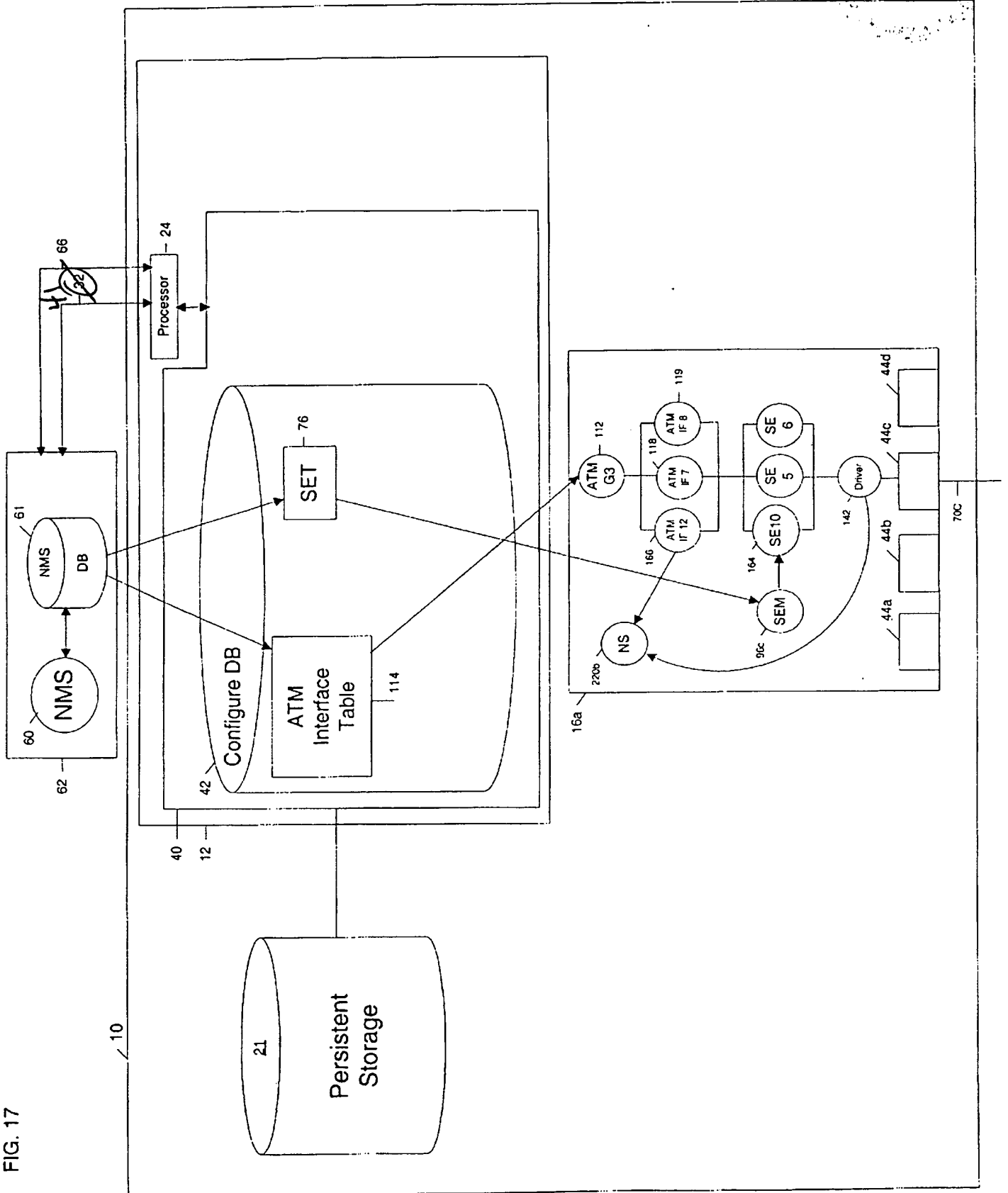Boston, MA 02110-2699
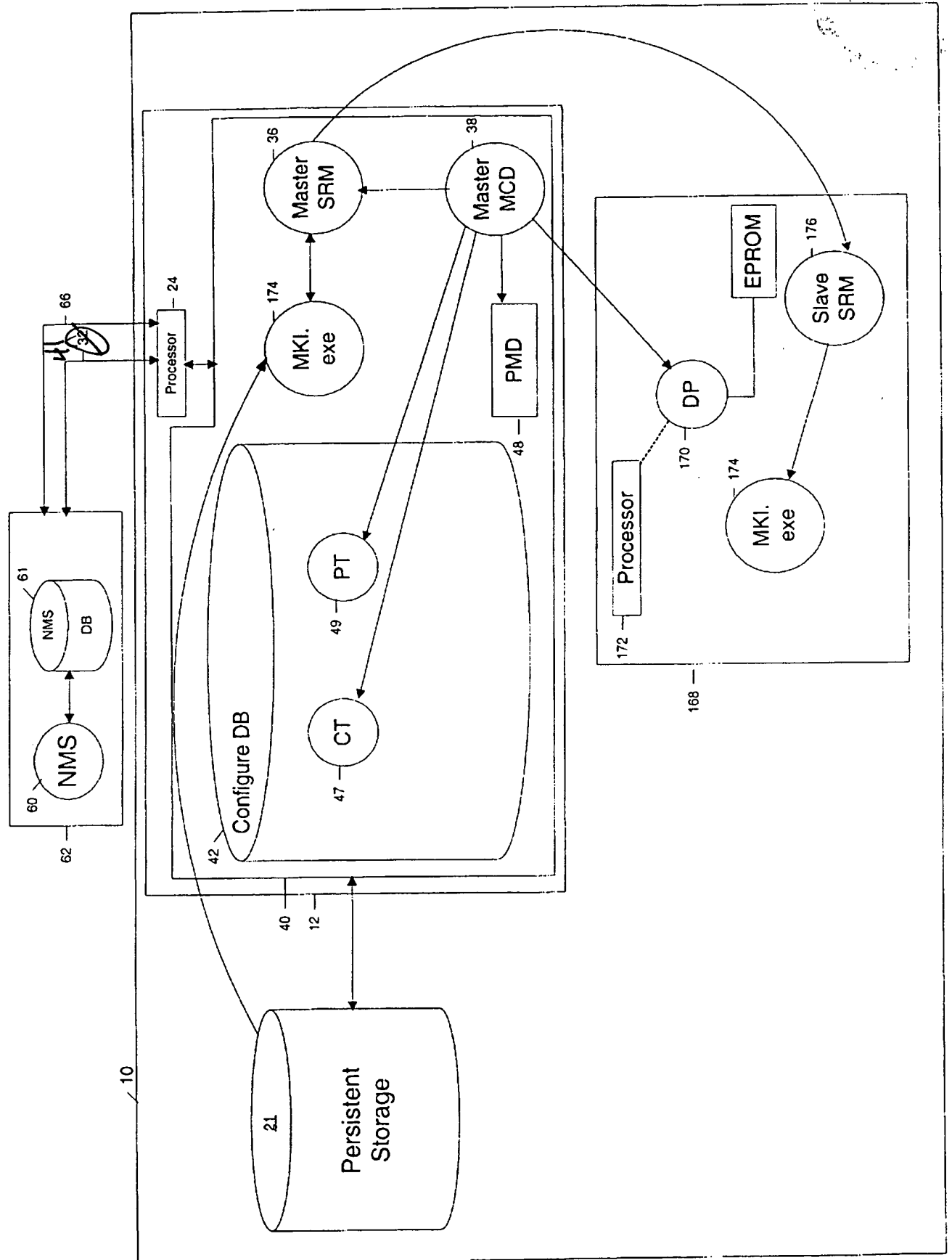Tel: (617)439-2550
Fax: (617)310-9550

925033.1

FIG. 9

FIG. 16c

FIG. 17

FIG. 18

FIG. 19

FIG. 20

FIG. 23

FIG. 26

FIG. 35

NMS 60

Persistent Storage

Config DB

PPM

62

540

542

543

544 (Switched Ethernet Network)

Switching Fabric Card (SF)

570a / 570b

Quadrant 1
(Redundant) Forwarding Card
Forwarding Card
Cross Connect Card
Universal Port Card

Quadrant 2
(Redundant) Forwarding Card
Forwarding Card
Cross Connect Card
Universal Port Card

Quadrant 3
(Redundant) Forwarding Card
Forwarding Card
Cross Connect Card
Universal Port Card

Quadrant 4
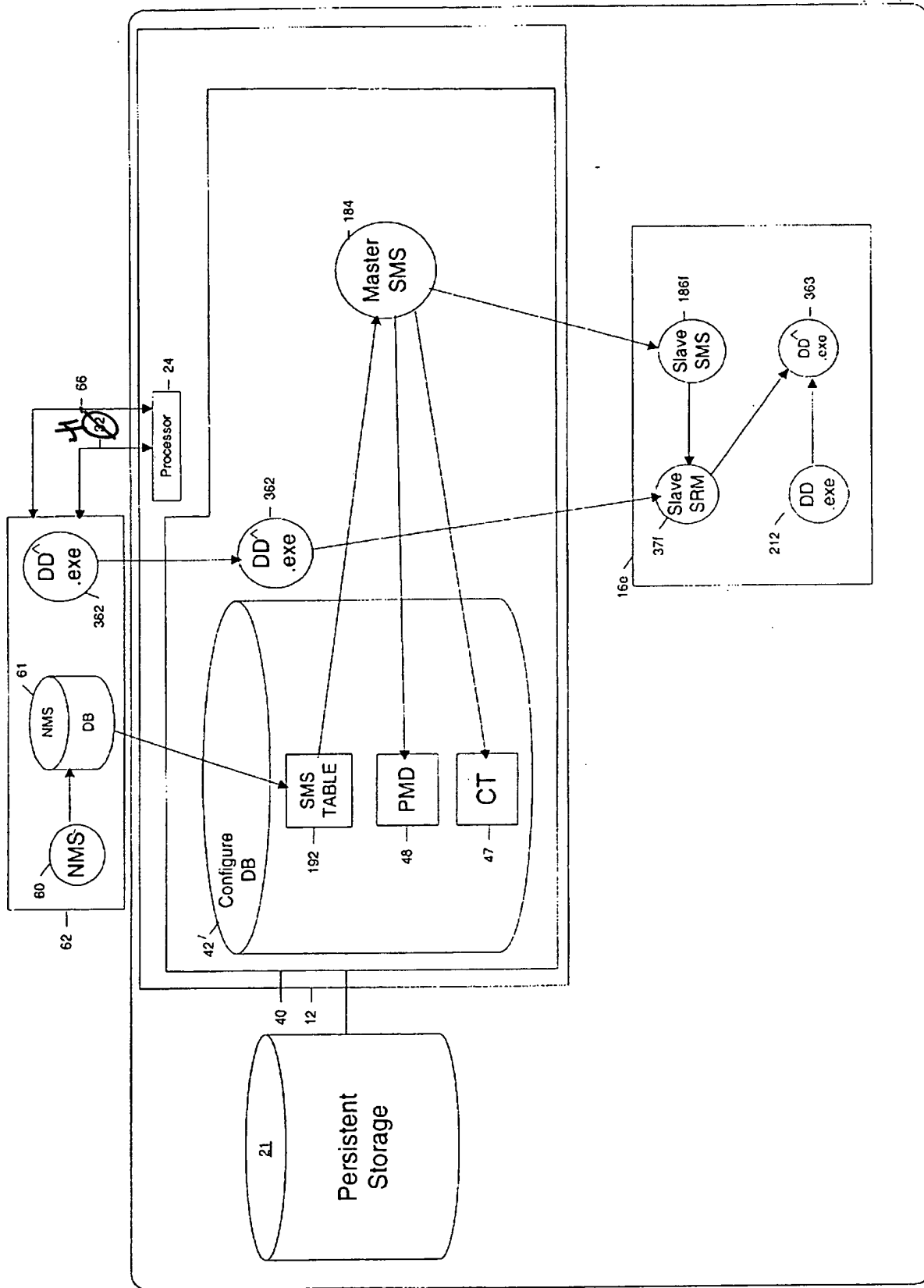(Redundant) Forwarding Card
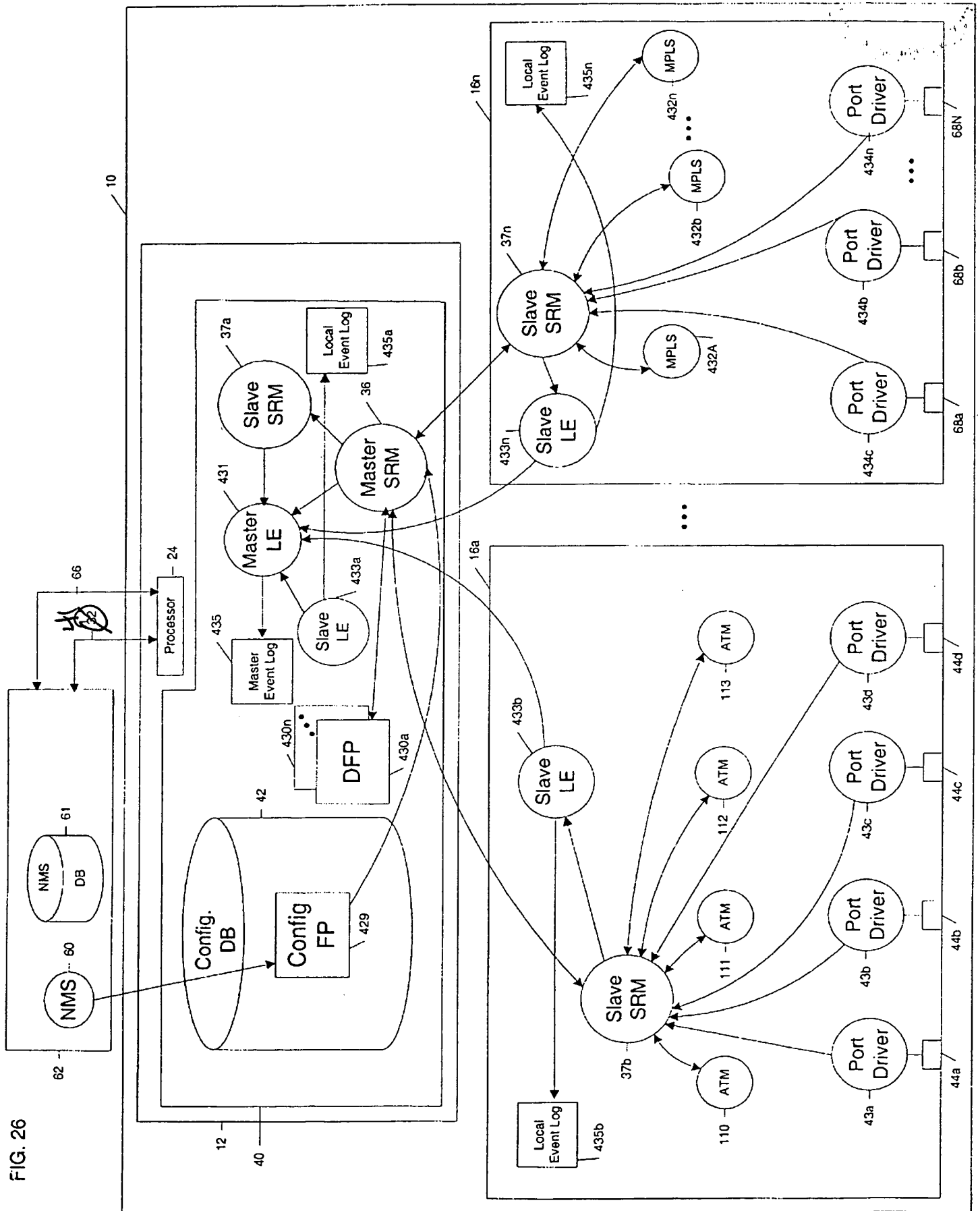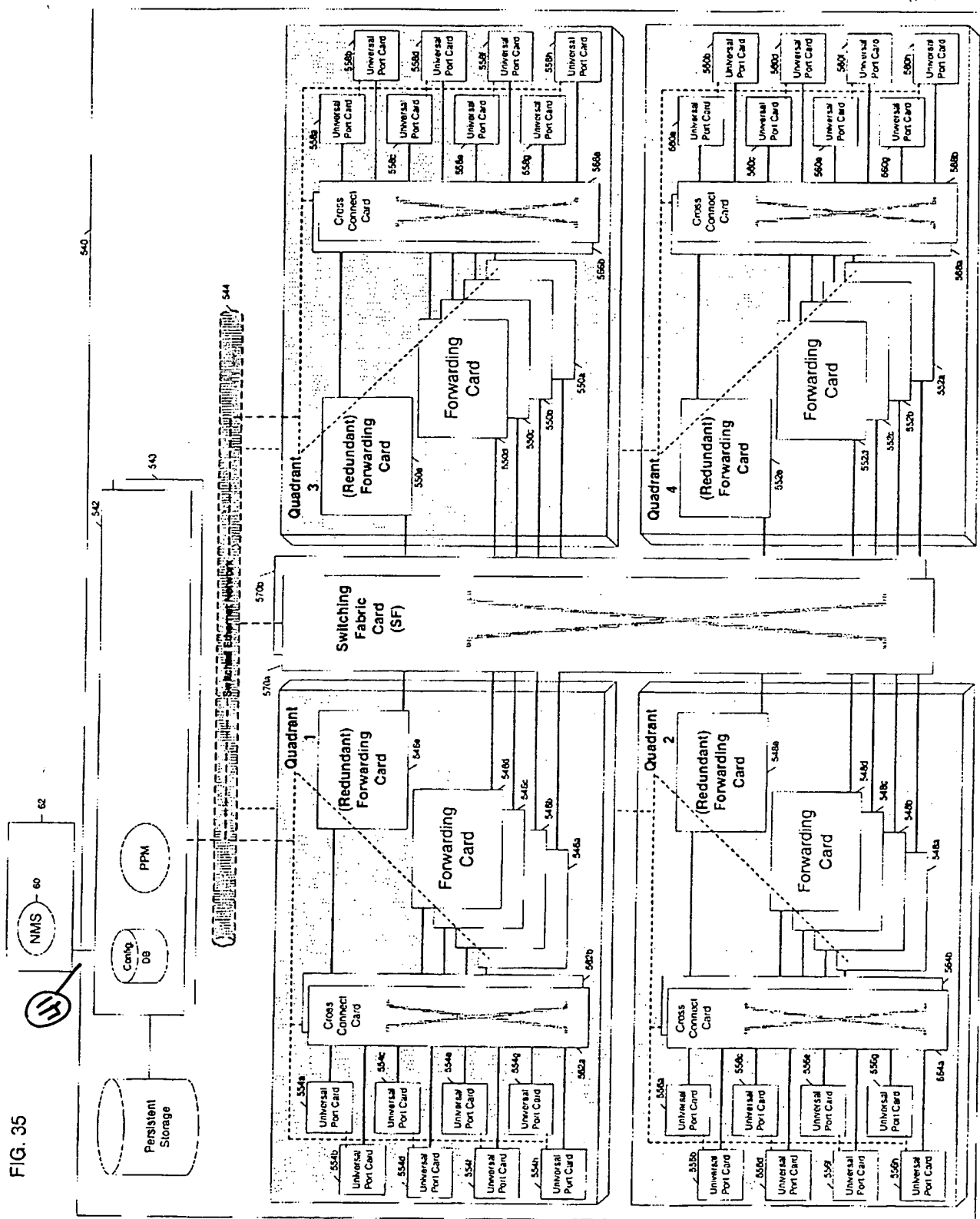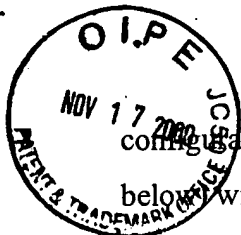Forwarding Card
Cross Connect Card
Universal Port Card

configuration database and NMS database are downloaded and upgraded (as described below) without re-booting the computer system.

Network Management System (NMS):

Referring to Fig. 9, a user of computer system 10 works with network management system (NMS) software 60 to configure computer system 10. In the embodiment described below, NMS 60 runs on a personal computer or workstation 62 and communicates with central processor 12 over Ethernet network 32 (out-of-band). Instead, the NMS may communicate with central processor 12 over data path 34 (Fig. 1, in-band). Alternatively (or in addition as a back-up communication port), a user may communicate with computer system 10 through a terminal connected to a serial line 66 connecting to the data or control path using a command line interface (CLI) protocol. Instead, NMS 60 could run directly on computer system 10 provided computer system 10 has an input mechanism for the user.

NMS 60 establishes an NMS database 61 on work station 62 using a DDL file corresponding to the NMS database and downloaded from persistent storage 21 in computer system 10. The NMS database mirrors the configuration database through an active query feature (described below). In one embodiment, the NMS database is an Oracle database from Oracle Corporation in Boston, Massachusetts. The NMS and central processor 12 pass control and data over Ethernet 32 using, for example, the Java Database Connectivity (JDBC) protocol. Use of the JDBC protocol allows the NMS to communicate with the configuration database in the same manner that it communicates with its own internal storage mechanisms, including the NMS database. Changes made to the configuration database are passed to the NMS database to insure that both databases store the same data. This synchronization process is much more efficient and timely than older methods that require the NMS to periodically poll the network device to determine whether configuration changes have been made. In these systems, NMS polling is unnecessary and wasteful if the configuration has not been changed. Additionally, if a configuration change is made through some other means, for example, a command line interface, and not through the NMS, the NMS will not be updated until the